REMARKS

Claims 5-8 and 11-16 are pending of which claims 5, 11, and 13 are independent. Claims 5-8 and 11-16 have been amended. No new matter has been added. Reconsideration of the action mailed June 9, 2004, is requested in light of the foregoing amendments and the following remarks.

The Examiner rejected claims 5-8 and 11-12 under the doctrine of obviousness-type double patenting over claims 5-10 of U.S. Patent No. 6,654,518 to Liu ("Liu"). The Examiner rejected claims 11-12 under 35 U.S.C. § 112, second paragraph, as being indefinite. The Examiner rejected claims 5-8 and 11-12 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,400,508 to Liu ("Liu") and U.S. Patent No. 6,088,166 to Lee ("Lee") in view of U.S. Patent No. 6,301,030 to Robinson ("Robinson"). Applicant respectfully traverses the rejections.

The Examiner allowed claims 13-16. Applicant appreciates the Examiner's identification of allowable subject matter in claims 13-16.

Double Patenting Rejection

Claims 5-8 and 11-12 stand rejected under the doctrine of obviousness-type double patenting as being unpatentable over claims 5-10 of Liu. To obviate the rejections, Applicant encloses a terminal disclaimer made pursuant to 37 C.F.R. § 1.321(b). Applicant respectfully submits that the double patenting rejection is now moot.

Section 112 Rejection

Claims 11-12 stand rejected under 35 U.S.C. § 112, second paragraph, as indefinite for failing to particularly point out and distinctly claim the subject matter of the invention. Specifically, the Examiner noted that the terms "off-axis" and "on-axis" fibers recited in claim 11 lack proper antecedent basis. Applicant has amended claim 11 for clarity and to provide clearer antecedent basis. Applicant respectfully submits the § 112 rejection to claims 11 and 12 has been overcome.

Section 103(a) Rejections

Claim 5 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Liu and Lee in view of Robinson. Claim 5 is directed towards a tap output collimator that includes a GRIN lens having a first planar incline surface and a second planar incline surface. Liu, Lee, and Robinson, fail to disclose or suggest a tap output collimator that includes a GRIN lens having first and second planar incline surfaces.

Liu discloses a wavelength interleaver. The wavelength interleaver can include a glass prism 7a as an "incline angle projection means 7". *See* FIG. 3A; col. 6, lines 22-28. The Examiner states that the glass prism 7a is Applicant's claimed GRIN lens. Applicant respectfully disagrees. A glass prism functions only to bend light. Light having different wavelengths are refracted by different amounts resulting in wavelength dispersion. A GRIN lens, by contrast, has an index of refraction that varies with radial distance from a central axis of the GRIN lens. A glass prism and a GRIN lens are different types of optical components that perform different functions. Liu does not disclose or suggest a GRIN lens. Liu furthermore does not disclose a GRIN lens having a first and second planar incline surfaces.

Lee discloses an optical switch including a prism 130. *See* FIG. 1; col. 1, lines 51-62. The prism 130 is used as a switching device. Without the presence of the prism 130, a light beam follows an optical path 135 to an output collimator 103. *See* FIG. 1; col. 1, lines 57-59. When the prism 130 is introduced to the optical path, the light beam is deflected to output collimator 102 instead of output collimator 103. *See* FIG. 1; col. 1, lines 59-62. Prism 130, however, is not a GRIN lens. Lee does not disclose or suggest the prism 130 to be a GRIN lens having first and second planar incline surfaces on a first side of the GRIN lens.

Robinson discloses a polarization multiplexer and demultiplexer apparatus. As a demultiplexer, an unpolarized beam of light is separated into oppositely polarized beams using a birefringent crystal. *See* FIG. 2; col. 4, lines 20-23. The two polarized beams are focused by GRIN lens 30 to two output fibers. *See* FIG. 2; col. 4, lines 24-26; col. 3, line 19. The GRIN lens 30 is only disclosed as having a convex surface on each side. *See* FIG. 2. Robinson does not disclose or suggest a GRIN lens having first and second planar incline surfaces. For at least

the foregoing reasons, Applicant respectfully submits that claim 5, as well as claims 6-8, which depend from claim 5 respectively, are in condition for allowance.

Claim 11 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Liu and Lee in view of Robinson. Claim 11 is directed towards a multiple beam collimator that includes a glass prism operable to receive collimated angled light beams from a GRIN lens at a surface of the prism normal to a central axis of the collimator and transmitting light beams parallel to the central axis from a plurality of incline surfaces.

In Liu, the interleaver apparatus includes a glass prism 7 that is used to bend parallel incoming light towards respective output fiber collimators. *See* FIG. 2A; FIG. 3A, col. 6, lines 22-28; col. 7, lines 4-9. The glass prism in Liu, therefore, receives parallel input light at a first side including two planar incline surfaces such that the light exiting the normal surface of the prism is angled towards the two fiber outputs. In contrast, the claimed glass prism receives angled light at a surface normal to a central axis of the collimator such that the light exiting the prism from a side including a plurality of incline surfaces has been refracted parallel to the central axis.

In Lee, the disclosed glass prism 130 is a rectangular solid that has been rotated in order to deflect an incoming light beam towards a fiber output. *See* FIG. 1. The prism of Lee does not include a side having a surface normal to a central axis of the apparatus for receiving angled light beams. Additionally, both the input and output beams in Lee are parallel to the central axis. Lee does not disclose or suggest a glass prism that receives angled light at a normal surface and exits light parallel to the central axis from two planar incline surfaces.

The apparatus of Robinson does not include a glass prism. *See* FIGS. 1-2. Robinson does not disclose or suggest a glass prism that receives angled light at a normal surface and exits light parallel to the central axis from two planar incline surfaces. For at least the foregoing reasons, Applicant respectfully submits that claim 11, as well as claim 12, which depends from claim 11, are in condition for allowance.

Applicant respectfully requests that all pending claims be allowed. Please apply any charges or credits to deposit account 06-1050.

Respectfully submitted,

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Brian J. Gustafson
Reg. No. 52,978

Fish & Richardson P.C.
500 Arguello Street, Suite 500
Redwood City, California 94063
Telephone: (650) 839-5070
Facsimile: (650) 839-5071

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